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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/892,539 | 06/28/2001 | Shunichi Abe | 401263 | 5169 |

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EXAMINER

GRAYBILL, DAVID E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2827

DATE MAILED: 08/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|----------------------------|--|
| Office Action Summary | Application No. 09/892,539 | Applicant(s) ABE ET AL. | |
| | Examiner David E Graybill | Art Unit 2827 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 8-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on 28 June 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: ____ |

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Applicant's election with traverse of the species of Figure 13, claims 1-3 and 5-7, in the paper filed 5-21-3, is acknowledged. The traversal is on the ground(s) that there is no undue burden. This is not found persuasive because the reasons for insisting on restriction as stated in MPEP 808 have been clearly met. The requirement is still deemed proper and is therefore made FINAL.

Claims 4 and 7-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 6-28-1 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

The drawings are objected to because Figure 10 appears to be incorrect. Specifically, the cross section view along line X-X does not illustrate element 4b. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Choi (6075284).

At column 3, lines 4-27, and column 3, line 59 to column 4, line 4, Choi teaches a semiconductor device having terminal electrodes 34 located, in plan view, outside a region where semiconductor chips 40 are located; a lower semiconductor chip overlapping in height with said terminal electrodes; an upper semiconductor chip located opposite said lower semiconductor chip; wires 50 connecting said upper and lower semiconductor chips to said terminal electrodes; and an encapsulating resin 60 encapsulating said upper and lower semiconductor chips and said wires, wherein said encapsulating resin and said terminal electrodes have respective bottom surfaces coplanar with each other, including a die pad 31 supporting said upper

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semiconductor chip and coplanar with said terminal electrodes, and wherein said lower semiconductor chip does not overlap, in plan view (the plan view of Figure 13), said die pad, wherein said lower semiconductor chip and said encapsulating resin have respective bottom surfaces coplanar with each other and the bottom surface of said lower semiconductor chip is exposed and not covered by said encapsulating resin.

To further clarify the teaching of the plan view of Figure 13, it is noted that the figures are not limited to a particular absolute frame of reference. Thus, there is a frame of reference wherein Figure 13 is a top or horizontal (plan) view.

Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Song (5770888).

At column 3, line 20 to column 4, line 65, Song teaches a semiconductor device having terminal electrodes 22 located, in plan view, outside a region where semiconductor chips 21 are located; a lower semiconductor chip overlapping in height with said terminal electrodes; an upper semiconductor chip located opposite said lower semiconductor chip; wires 24 connecting said upper and lower semiconductor chips to said terminal electrodes; and an encapsulating resin 26 encapsulating said upper and lower semiconductor chips and said wires, wherein said encapsulating resin and said terminal electrodes have respective bottom

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surfaces coplanar with each other, including a die pad 22a supporting said upper semiconductor chip and coplanar with said terminal electrodes, and wherein said lower semiconductor chip does not overlap, in plan view (the plan view of Figure 5), said die pad, wherein said lower semiconductor chip and said encapsulating resin have respective bottom surfaces coplanar with each other and the bottom surface of said lower semiconductor chip is exposed and not covered by said encapsulating resin ("at least one surface of the chip is exposed"), wherein said semiconductor device is a QFN (Quad Flat Non-Lead) Package having said terminal electrodes surrounding said upper and lower semiconductor chips, wherein said upper and lower semiconductor chips are respectively rectangular in shape, connection terminals ("bond pads" not labeled) of said upper and lower semiconductor chips are arranged along shorter sides of said upper and lower semiconductor chips, opposing each other, and said upper and lower semiconductor chips cross (lie across) each other, in plan view, wherein said terminal electrodes are leads located along two opposing sides of said semiconductor device with said upper and lower semiconductor chips therebetween.

To further clarify the teaching of the plan view of Figure 5, it is noted that the figures are not limited to a particular

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absolute frame of reference. Thus, there is a frame of reference wherein Figure 5 is a top or horizontal (plan) view.

Applicant's amendment and remarks filed 5-21-3 have been fully considered, are addressed by the rejection supra, and are further addressed infra.

Applicant contends that the "identification of particular figures in the Official Action mailed January 14, 2003 was, at best, incomplete," apparently, because every alleged illustration drawn to each species was not identified in the requirement. This contention is respectfully traversed because there is no requirement that every illustration drawn to each species must be identified in a restriction requirement, and the species of Figure 13 suffices to clearly identify the relevant species.

Relatedly, applicant argues that "all of Figures 9-13 pertains to the same species." This argument is respectfully traversed because Figure 10 appears to be incorrectly illustrated; hence, it does not pertain to the species of Figure 13.

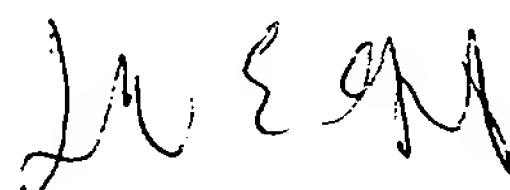
The art made of record and not applied to the rejection is considered pertinent to applicant's disclosure. It is cited primarily to show inventions similar to the instant invention.

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Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 703-306-3329.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is 703/3087724.



David E. Graybill
Primary Examiner
Art Unit 2827

D.G.

10-Aug-03